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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 10/072,406 | 02/07/2002 | Steven R. Hetzler | ARC920000031US1 | 4888 |
| 21617 | 7590 | 08/11/2004 | EXAMINER | |
| IBM CORPORATION ALMADEN RESEARCH CENTER INTELLECTUAL PROPERTY LAW 650 HARRY ROAD C4TA/J2 SAN JOSE, CA 95120 | | | DAVIDSON, DAN | |
| | | ART UNIT | PAPER NUMBER | |
| | | 2651 | | |
| DATE MAILED: 08/11/2004 | | | | |

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | |
|------------------------------|-----------------|----------------|
| Office Action Summary | Application No. | Applicant(s) |
| | 10/072,406 | HETZLER ET AL. |
| Examiner | Art Unit | |
| Dan I Davidson | 2651 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 07 February 2002.
 2a) This action is FINAL. 2b) This action is non-final.
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-18 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) Claim(s) _____ is/are allowed.
 6) Claim(s) 1,2,7,9-11 and 16 is/are rejected.
 7) Claim(s) 3-6,8,12-15,17 and 18 is/are objected to.
 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.
 10) The drawing(s) filed on 07 February 2002 is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) Notice of References Cited (PTO-892)
 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
 Paper No(s)/Mail Date 02072002.

4) Interview Summary (PTO-413)
 Paper No(s)/Mail Date. _____.
 5) Notice of Informal Patent Application (PTO-152)
 6) Other: _____.

DETAILED ACTION

1. The information disclosure statement filed February 7, 2002 has been received and has been considered and made of record.

Claim Objections

2. Claims 8, 17, and 18 are objected to because of the following informalities:

(1) In claims 8 and 17, line 1, respectively, "the servo sector field" has a lack of antecedent basis.

(2) In claim 18, lines 1-2, "the nearest prior servo sector field" has a lack of antecedent basis.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, 7, 9-10, and 16 are rejected under 35 U.S.C. 102(b) as being anticipated by Kanda (US 5,206,847 A).

Kanda discloses a read clock circuit (Fig. 6) for a recording disk system (Fig. 3) that has servo sectors (Fig. 5, Servo Byte as part of a Block) extending in a radial direction across the bands (at col. 7, lines 41-42, Kanda discloses that his invention is applicable for a magnetic disk apparatus; given that by definition

an embedded servo arrangement (Fig. 5, block) in a magnetic disk apparatus involves servo sectors extending in a radial direction across all the bands, this claim limitation is satisfied), the circuit comprising: a variable frequency oscillator / phase-locked loop (VFO/PLL) (Fig. 6, 5-8) receiving a servo sector transition signal (Fig. 6, clock pit signal) from transitions detected in a servo sector (Fig. 5, 23; col. 5, lines 61-64) and outputting a servo frequency signal that is synchronous to the servo sector transition signal (Fig. 6, 5-8; col. 6, line 20; Servo Frequency Clock), and a frequency synthesizer generating a read clock signal including its phase (Fig. 6, 15-19, Data Reference Clock) based on the servo frequency signal (Servo Frequency Clock), the read clock signal being synchronous with the servo sector transition signal (Fig. 6; col. 6, line 25). Kanda also discloses that the disk recording system is a data banded recording system having a plurality of data bands, each data band having data recorded at a unique frequency (Fig. 4, Zones A-G; col. 5, lines 42-49), and wherein the frequency synthesizer generates a unique read clock signal for each data band (col. 6, lines 10-16). Finally, Kanda discloses a controller coupled to the frequency synthesizer and providing a data band identification signal to the frequency synthesizer (Fig. 6, input to 19 from control unit).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which

said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 2 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kanda (US 5,206,847 A) as applied to claims 1 and 10 above, and further in view of Serrano et al (US 6,049,438 A).

Kanda discloses the limitations at claim 1 as discussed above.

As discussed above, Kanda discloses using clock pit signals as the transitions detected in the servo sector for generating a servo frequency signal. As well, Kanda discloses that his invention is applicable in a magnetic disk apparatus. Therefore, Kanda allows for the option of detecting transitions in the servo signal for generating a servo frequency signal using transitions that would be used in a magnetic disk apparatus (not clock pit signals).

Serrano et al teach using the fixed frequency pattern of an AGC field (which inherently involves transitions) to indicate the servo frequency signal (column 6, lines 60-64).

It would have been obvious to one of ordinary skill in the art at the time of Applicant's invention to use the transitions of an AGC to indicate the servo frequency signal in the magnetic disk embodiment disclosed by Kanda; motivation being uniformity of transitions of the AGC across the entire radial direction of the disk.

Allowable Subject Matter

7. Claims 3-6, 8, 12-15, and 17-18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Re claims 3 and 12; the prior art of record, and in particular Kanda (US 5,206,847 A), fails to teach or suggest that the transitions detected in the servo sector are from a PES field of the servo sector.

Re claims 4 and 13; the prior art of record, and in particular Kanda (US 5,206,847 A), fails to teach or suggest that the transitions detected in the servo sector are from a track identification field of the servo sector.

Re claims 5 and 14; the prior art of record, and in particular Kanda (US 5,206,847 A), fails to teach or suggest that the servo frequency signal is based on transitions from a plurality of servo sector fields.

Re claims 6 and 15; the prior art of record, and in particular Kanda (US 5,206,847 A), fails to teach or suggest that the servo sector transition signal includes transitions from at least one AGC field, at least one PES field, and at least one TID field.

Re claim 8; the prior art of record, and in particular Kanda (US 5,206,847 A), fails to teach or suggest that when a servo sector field is corrupted, the VFO/PLL receives the servo sector transition signal related to detected transitions in the corrupted servo sector field, the VFO/PLL outputting a servo frequency signal that is synchronous to the servo sector transition signal.

Re claim 17; the prior art of record, and in particular Kanda (US 5,206,847 A), fails to teach or suggest that when a servo sector field is partially corrupted, the VFO/PLL receives the servo sector transition signal related to detected transitions in the non-corrupted region of the servo sector field, the VFO/PLL

outputting a servo frequency signal that is synchronous to the servo transition signal from the non-corrupted region.

Re claim 18; the prior art of record, and in particular Kanda (US 5,206,847 A), fails to teach or suggest that when a nearest prior servo sector field is corrupted, the VFO/PLL receives the servo sector transition signal related to detected transitions in a next nearest prior servo sector field, the VFO/PLL outputting a servo frequency signal that is synchronous to the servo sector transition signal.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Shelton et al (US 2003/0043710 A1) teach generating a servo clock signal using a sync mark detect signal, and generating a data clock signal synchronous with the servo clock signal.

Dovek et al (US 6,104,563 A) teach a servo region AGC containing a fixed frequency pattern indicative of a "data rate" for the servo region.

Chevalier (US 5,253,131 A) teaches a servo pattern where all pulses in the pattern are allowed to be used for reference clock synchronization, track following and seeking, and radial and angular position synchronization.

Fischler et al (US 4,894,734 A), teach generating a data clock signal synchronous with a fixed frequency servo clock signal.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dan I Davidson whose telephone number is (703) 308-8535. The examiner can normally be reached on Monday-Friday 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sinh Tran, can be reached on (703) 305-4040. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DID
Dan I Davidson
August 8, 2004

~~SINH TRAN~~
~~PRIMARY EXAMINER~~


SINH TRAN
PRIMARY EXAMINER